Linux System Administration (LPI & CompTIA)

Category: Infrastructure & IT Operations | **Vendor:** CompTIA

Duration: 40.00 hours (5 days) **32.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format:	Instructor Led - Online
Certification:	Linux Professional Institute (LPI)
Related Exam:	101-400, 102-400

Course Overview

This instructor led Linux System Administration (LPI & CompTIA) training course is designed to teach the key administration, security, networking and performance tasks required on a Linux Enterprise system.

Similarly, the course is targeted to closely follow the official Linux Professional Institute (LPI) and CompTIA Linux+ certification curriculums.

About This Course

The delegate will have knowledge in all, and practise in some, of the following:

- Performing administrative tasks via supplied tools (YaST) and the command line
- Comparison and management of Linux file systems
- Understanding Logical Volume Management
- Configuring disk quotas
- Listing, creating and removing swap space
- Managing users and groups
- Configuring the environment and user limits
- Extended permissions and sudo
- Managing software packages and updating Linux
- Understanding GRUB and the startup process
- Configuring startup scripts
- Managing units and services
- Changing run levels and system shutdown
- Configuring local and remote printers
- Managing processes and job scheduling
- Configuring SSH and encrypting data
- IPv4 and IPv6 networking
- Understanding network protocols
- Managing xinet and network services (ftp, telnet etc)
- Configuring local and network time
- Remote system administration
- Creating backups and compressing data
- Modifying language and time zone settings
- Creating MariaDB databases and working with SQL
- Understanding hardware and device files
- Configuring system logging and rotating logs

Who Should Attend

The Linux System Administration (LPI & CompTIA) training course is suitable for novice Linux System Administrators, Programmers and other technical IT staff who need to acquire administration knowledge of the key administrative, networking, performance and security tasks required on a Linux operating system within the Enterprise.

An ideal course for delegates who will be working in an environment using several different Linux distributions and therefore knowledge of skills common to all the different Linux distributions is required. For the purpose of practical exercises, SUSE Linux will be used.

Delegates who wish to work towards achieving the Linux Administrator LPIC-1 or CompTIA Linux+ certifications will find this course a good basis for LPIC-1: 101-400 and 102-400 exams or CompTIA Linux+: LX0-103 and LX0-104 exams.

The appendixes also include other related topics that would be useful reading for delegates preparing for certification.

Note: Should the delegate only require knowledge of Red Hat Linux then they should instead consider attending our range of Red Hat Linux Administration courses.

Prerequisites & Entry Requirements

General Prerequisites:

This Linux System Administration (LPI & CompTIA) course assumes good knowledge of the Linux operating system in an Enterprise environment to the level covered in the Linux Introduction course. Alternatively, relevant experience of UNIX or Linux servers is required, preferably within an enterprise environment.

Knowledge of Linux Shell Programming to the level covered on the Linux Shell Programming course would also be beneficial.

Pre-Requisite Courses

- Linux Introduction Linux Introduction (LI)

Learning Outcomes

Upon successful completion of this course, participants will be able to:

On completion of this course the delegate will have the required technical knowledge to administer a Linux server within the Enterprise. They will have gained practical experience of configuring administrative, networking, performance and security aspects of a Linux Enterprise system.

The delegate will possess the essential knowledge required to study towards the Linux Administrator LPIC-1 and CompTIA Linux+ certifications.

The Linux System Administration (LPI & CompTIA) training course will teach some of the necessary skills to enable the delegate to work towards achieving the following certifications:

- Linux Administrator LPIC-1: 101-400 and 102-400 exams
- CompTIA Linux+: LX0-103 and LX0-104 exams

This course together with the Linux Introduction and Linux Shell Programming or the combined Linux Fundamentals course, covers the major topics required, for the Linux Administrator LPIC-1 and the CompTIA Linux+ qualifications.

Before taking any exam, ensure you have the recommended experience. The LPI and CompTIA websites list all exam requirements and these are updated regularly.

Exams are not included as part of the course.

Follow on Courses

- Linux Advanced System Administration (LPI)
- Linux Advanced Shell Programming Tools
- Apache Web Server
- Perl Programming
- Oracle SQL

Detailed Course Outline

Course Contents - DAY 1

Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

Session 1: FILE SYSTEM CONFIGURATION

- File system types
- The Linux I/O stack
- MBR vs GPT partition tables
- Partitioning a disk
- Comparison of Linux filesystems
- Creating Btrfs, XFS and EXT filesystems
- Displaying disk usage
- Mounting and unmounting file systems
- Configuring labels and UUIDs
- Locating files in use
- Exercise

Session 2: ADVANCED FILE SYSTEM OPERATIONS

- Logical Volume Management

- Checking and repairing the file system
- Growing file systems
- Filesystem debugging and defragmentation
- Listing swap areas
- Creating and removing swap areas
- Exercise

DAY 2

Session 3: USER ACCOUNT MANAGEMENT

- User Private Group scheme
- Files used in creating a user
- Adding users via the command line and YaST
- Managing groups
- Password administration
- Bash Shell environment
- Configuring user limits
- Extended permissions
- Configuring Privilege Delegation via sudo
- Sudo aliases and groups
- Monitoring login activity
- Exercise

Session 4: PACKAGE MANAGEMENT

- The Red Hat Package Manager (rpm)
- Verifying Software
- Querying installed and uninstalled packages

- Installing and removing packages
- Upgrade mechanism
- Converting rpm packages to cpio format
- Transferring files via cURL
- The libzypp package manager
- Exercise

Session 5: SYSTEM LOGGING

- rsyslog configuration
- Configuring remote logging
- Testing using logger
- Managing logs with logrotate
- Basic and advanced journal queries
- Configuring the journal
- Exercise

Session 6: SYSTEM SECURITY AND ENCRYPTION

- Secure shell OpenSSH
- Public/private key authentication
- X11 forwarding
- The SUSE firewall
- Encryption with GNU Privacy Guard GPG
- Managing firewalld from the GUI and command line
- Exercise

DAY 3

Session 7: SYSTEM STARTUP AND SHUTDOWN

- System startup process
- Startup script framework
- Managing services using YaST
- Starting and stopping services dynamically
- Creating Systemd services, timers and mount units
- Running transient units
- suseconfig and /etc/sysconfig
- Changing run levels and shutdown
- Exercise

Session 8: PROCESS MONITORING AND SCHEDULING

- Monitoring processes
- Graphical monitoring tools
- Utilising terminal multiplexers
- Monitoring with watch
- Shared libraries
- Scheduling processes with at
- The cron configuration files
- Scheduling processes with cron
- crontab command options
- Managing anacron
- Exercise

Session 9: LINUX NETWORKING

- Basic network configuration
- IPv4 and IPv6 addressing
- Network protocols
- Network services and port numbers

- Configuring IPv4 and IPv6 with ip and Network Manager
- Configuration with systemd-networkd
- Managing network devices
- Resolving hostnames and DNS
- Searching domains
- Routing under Linux
- Exercise

DAY 4

Session 10: INTERNET SERVICES

- Network services
- Managing services with systemd sockets
- Checking network service ports
- Analysing network packets
- Configuring and monitoring network time
- Configuring the hardware clock
- Remote administration
- Configuring Virtual Network Computing
- Exercise

Session 11: CONFIGURING PRINTERS

- The Common Unix Printing Service CUPS
- Printer devices and configuration
- Installing printers
- Configuring the CUPS server
- Printer options

- Print commands

- Managing print queues

- Exercise

Session 12: LOCALISATION

- Localisation overview

- Locale variables

- Converting character sets and encoding

- Configuring the locale and keymap

- Configuring the system and user time zone

- Exercise

Session 13: VIRTUALISATION, CLOUD SERVICES AND CONTAINERS

- Configuring KVM virtualisation

- Installing virtual systems

- Understanding Linux Containers

- Creating and running Docker containers

- Iaas cloud

- Exercise

DAY 5

Session 14: DEVICES UNDER LINUX

- Device services

- Device file naming conventions

- The /sys and /proc directories
- Examining hardware
- Hardware and software configuration messages
- ACPI service and Desktop Bus
- Managing disk parameters
- Detecting new hardware
- System overview: siga
- Exercise

Session 15: BACKUP AND RESTORE

- Archiving with tar and cpio
- Device cloning with dd
- Compressing files
- Archiving RAR files
- unar and other backup tools
- Exercise

Session 16: TROUBLESHOOTING

- Troubleshooting process
- Booting into maintenance mode
- Booting the rescue system
- The SLE Maintenance Model
- Generating information with supportconfig
- Exercise

□□ Certification Path

Linux Professional Institute (LPI)

Exam: 101-400, 102-400

Skills You Will Learn:

On completion of this course the delegate will have the required technical knowledge to administer a Linux server within the Enterprise. They will have gained practical experience of configuring administrative, networking, performance and security aspects of a Linux Enterprise system.

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Follow on Courses

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Frequently Asked Questions

Q: What delivery options are available for Linux System Administration (LPI & CompTIA)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: What certification does this course prepare me for?

The Linux System Administration (LPI & CompTIA) course helps prepare you for the Linux Professional Institute (LPI) certification path.

Q: Which exam does this course prepare me for?

This course prepares you for the 101-400, 102-400 official exam. You can take this exam at any exam center across United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online wherever you are located.

Q: How many CPD hours does this course provide?

The 5-day Linux System Administration (LPI & CompTIA) course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Linux System Administration (LPI & CompTIA) training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Linux System Administration (LPI & CompTIA)?

Yes, we provide corporate training, dedicated training, and closed classes for Linux System Administration (LPI & CompTIA). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Linux System Administration (LPI & CompTIA), Linux, LSA

Q: Why choose Nexus Human for Linux System Administration (LPI & CompTIA)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Linux System Administration (LPI & CompTIA) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

Professional Training & Development

Email: info@nexushuman.com

Website: www.nexushuman.com

Phone: +353 1 889 8700 (Ireland) | +44 20 8142 8961 (UK)

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